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Prevalence of Eczema in Early Infancy and the Prenatal Risk Factors and Knowledge Assessment among Parents in Saudi Arabia

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Abstract **Background:** The term "eczema" refers to a group of skin conditions that include nummular eczema, seborrheic dermatitis, contact dermatitis and Atopic Dermatitis (AD). AD, characterized by itching and redness, is increasingly prevalent and linked to other allergic diseases. **Objective:** The purpose of this research is to determine the prevalence of eczema in Saudi Arabian infants, as well as related prenatal risk factors and parental eczema knowledge. **Methodes:** This study is a cross-sectional study conducted from July 2024 July 2025 in Saudi Arabia. The study plans to recruit Parents through social media platforms like Twitter, Snapchat, Instagram, WhatsApp and Facebook. Inclusion criteria for this study consisted of parents residing within the Kingdom of Saudi Arabia. Conversely, exclusion criteria encompassed parents living outside of Saudi Arabia. **Results:** The prevalence of eczema among Saudi Arabian infants was studied, with special emphasis on prenatal risk factors and parental knowledge about eczema. The mean age was 36.1 years in the 415 participants, who also consisted of a huge majority (71.6%) of mothers. The results showed: 54% of children were not already diagnosed with eczema and the results underscore the importance of more education and early intervention. It was diagnosed most often in the first year of life (32.5%) with a tendency towards the arms (53.9%) and face (40.8%). Importantly, we found that psychological disorder was present in 41.4% of mothers during pregnancy, indicative of a possible underlying maternal risk factor. **Conclusion:** In this study we highlighted the high prevalence rate of eczema in infants in Saudi Arabia and highlight the importance of increased parental awareness of eczema. So, the findings show worrying gaps in both diagnosis and knowledge, there is much here that is not well understood when it comes to preventive measures and good management strategies. Prenatal risk factors, such as maternal psychological stress and genetic predisposition, also highlight the multiple facets of eczema. Therefore, Educational programs targeting parental awareness are essential to improve early detection and management of eczema.

Key Words Eczema, Infants, Saudi Arabia, Prevalence, Prenatal Risk Factors

INTRODUCTION

Atopic dermatitis (AD) and other endogenous dermatitis, as well as exogenous dermatitis like allergic and irritant contact dermatitis, are all included under the umbrella term "eczema," which is used by non-dermatologists and the general public to refer to a variety of dermatitis conditions. Apart from AD, eczema also includes contact dermatitis, seborrheic dermatitis, all of which present as itching and erythema and can be identified by their etiologies, morphologies, or distribution patterns [1]. Because atopic dermatitis (AD) is becoming more common and manifests in most countries and because there is evidence that AD can progress to other atopic phenotypes, AD has become a global public health concern [2].

Among diverse environmental factors, mold exposure during early life is a potential risk factor for developing allergic diseases, including AD, although studies are inconclusive. The inconsistent results might be attributable at least in part to differences in the timing of mold exposure. Like bacterial exposure, mold exposure, particularly during critical periods of gestation, may play a role in shaping the immune system, thereby affecting the development of AD [3]. Several worldwide investigations demonstrate that prevalence rates in developed nations vary widely, from 10% to 30% and that regional variations in rates are significant [4].

It's still unknown what causes eczema in the first place. Even while genetics is acknowledged as a primary cause of eczema, it cannot account for the notable rise in the prevalence of eczema that has been seen in recent years [5]. It is thought that a mix of genetic, environmental, dietary and lifestyle variables are to blame for this increase, while the precise explanation is unknown [6].

The impact of eczema on morbidity, quality of life and medical expenses is widely acknowledged. Moreover, systemic comorbidities and significant psychosocial distress are linked to severe cases of eczema [7].

Recent research has been conducted on Atopic dermatitis manifests itself throughout the first five years of life in 85% of cases, often starting as early as two or three months of age 2. About 10% of newborns in Germany have an illness, 15% of them seriously [8]. In 2023, Tianjin, China is a significant predictor for the early onset of AD in infants. In addition, the primary factors of early AD manifestation during pregnancy are maternal contact with industrial chemicals, maternal exposure to antibiotics and maternal passive smoking. In conclusion, early manifestations of AD are significantly influenced by both hereditary and environmental variables [9].

In Indonesia 2022, the Paediatric Department, Faculty of Medicine showed, that the prevalence of Atopic dermatitis was 23.67%, which impacted 65% of children under the age of 18 months, thirteen babies with mild AD and seventeen with intermediate AD were included in this study. About 18 (50%) and 9 (25%) of the individuals had vitamin D inadequacy, respectively. This study demonstrated that deficiencies in vitamin D were associated with the severity of AD and that vitamin D deficiency and insufficiency were more prevalent in newborns with AD [10].

Despite prior research on eczema in Saudi Arabian children and adolescents. There are still gaps in our knowledge of the linked prenatal risk factors and their prevalence in early infancy. By supplying information on the prevalence of eczema in early infancy, identifying prenatal risk factors and evaluating parental understanding, this study fills in these gaps. Comprehending these variables is essential for timely intervention, preventive measures and enhancing the management results and well-being of impacted newborns.

Objective

The study set out to determine the Prevalence of eczema among infants in Saudi Arabia, assess the prenatal risk factors in Saudi Arabia and assess the Knowledge of eczema among Parents.

METHODS

Study Design

This cross-sectional study conducted between July 2024 July 2025 adopted the convenience sampling method to collect data from parents across different regions in Saudi Arabia, this study evaluates the Prevalence of eczema among infants, prenatal risk factors and Knowledge of eczema among Parents in Saudi Arabia.

Study Setting: Participants, Recruitment and Sampling Procedure

Parents in Saudi Arabia represented the study population and social media channels (Facebook, Instagram, WhatsApp, Twitter, Snapchat, etc.) was used in a sample recruitment technique.

Inclusion and Exclusion Criteria

Qualifications for inclusion early childhood parents of both sexes, those whose ages range from birth to one year, parents who are not Saudi Arabian citizens and those whose ages exceed one year are excluded.

Sample Size

The Raosoft online sample size calculator (http://www.raosoft.com/samplesize.html) was used to determine the sample size. The applied formula is n = (1.96)^2 * 0.50/(0.05)^2, with a predetermined error tolerance of 5% and a confidence level of 95%. This formula was used to determine the sample size, which came out to be 384.

Method for Data Collection and Instrument (Data Collection Technique and Tools)

Structured questionnaire was used as a study tool. This tool was used in a relevant study conducted in Saudi Arabia [11,12,13]. The final version of the questionnaire consisted of 45 with 3 sections. Section 1, includes demographic features such as gender, residential area, educational level and income. Section 2, participants were asked about prevalence and risk factors when the child was diagnosed and at what age and also asked about her pregnancy if she was exposed to some conditions such as pressure or diabetes, etc. and about breastfeeding in general, whether breastfeeding was natural or not and also her family's history. Section 3 asked participants about their awareness and knowledge of eczema treatment, how to avoid or prevent eczema and whether they were aware that breastfeeding reduces the risk of developing eczema and asked if there is a link between the introduction of weaning food and eczema.

Scoring System

The total number of statements used to assess the level of knowledge was 13. Demographics: 7 statements; knowledge: 6. for accurate responses, one point is given; for wrong replies, zero points are given. We used Likert scales (Dichotomous, Three-Point and Quality Scales) for scoring. Ten was the maximum score, which was split as follows: The first cut-off marks for Bloom's analysis were 80.0-100.0%, 60.0-79% and 59.0%. Based on their ratings, the participants was split up into three groups.

A knowledge score could range from 0 to 9 points and it was divided into three levels: low knowledge was defined as having a score of 5 or less, moderate knowledge as having a score between 6 and 7 and high knowledge as having a score of 8 to 9.

Pilot Test

Twenty individuals were given the questionnaire and asked to fill it out. This was carried out to assess the study's viability and the usefulness of the questionnaire. The results of the pilot study were not included in the final analysis of the investigation.

Analyzes and Entry Method

The data was entered into the device using "Microsoft Office Excel Software" for Windows (2021). The acquired data was then transferred to the Statistical Package for Social Science Software (SPSS) tool, version 20 (IBM SPSS Statistics for Microsoft Windows, Version 21.0) for statistical analysis.

RESULTS

Table 1 displays various demographic parameters of the participants with a total number of (415). Participants' mean age is 36.1 years; age distribution is not uniform across categories, with a preponderance of people aged 36 to 45 years (31.8%). Notable majority of respondents (71.6%), i.e. mothers, reflect the role of the primary caregiver in the context analyzed. The children surveyed are not distributed across genders very unevenly (though slightly) and there seem to be a bit more females than males with a gender distribution around 50.4%. The participants are located in Saudi Arabia such that all be living in geographical space. An overwhelming majority of respondents 65.5 percent hold a bachelor's degree or higher. It also shows a broad economic range, as more than 20.7 percent earned more than 15,000 SAR per month.

As shown in Figure 1, this figure returns the age of the first diagnosis of eczema of a sample of 191 children out of total 415 participants, whose data they serve to illustrate the prevalence of this disease at different stages of development. Notable was the large cohort of 62 children, or roughly 32.4% of the sample and these were diagnosed before their first birthday. This is particularly important in thinking about early intervention possible. Next, 29 children (about 15.2%) were diagnosed at one year and 31 children (about 16.2%) at two years. 13 children (6.8%) received their diagnosis at four years and 30 children (15.7%) were diagnosed at five years.

Table 2 presents the data on prevalence and risk factors for eczema among a sample of 415 children, giving a view of clinical diagnosis and what may be potentially maternal risk. Of interest, almost 54% of the respondents reported that their children had not been diagnosed previously with eczema, implying a need for improved awareness and early care in pediatric dermatology. A large proportion of those diagnosed initially received their initial diagnosis within the first year of life (32.5%) indicating an imperative time for identification and treatment of this condition. Eczema may occur at variable sites, the arms (53.9%) and face (40.8%) being exceptionally common, suggesting a potential environmental or genetic factor. Other possible contributing factors to a child's chances of having eczema include a history of psychological issues during pregnancy (41.4%) and a wide range of medical conditions like gestational diabetes and heart disease (5.8%). Additionally, the data confirms the preponderance of eczema related to family history (28.3%) and suggests a genetic predisposition.

Table 1: Sociodemographic Characteristics of Participants (n = 415)

Parameter		No.	Percentage
Age (Mean:36.1, STD:9.0)	29 years or less	110	26.5
	30 to 35	105	25.3
	36 to 45	132	31.8
	More than 45	68	16.4
Relationship with the infants	Mother	297	71.6
	Father	118	28.4
Child sex	Female	209	50.4
	Male	206	49.6
Do you live in Saudi Arabia?	No	0	0
	Yes	415	100.0
Residential region	Northern region	37	8.9
	Southern region	55	13.3
	Central region	105	25.3
	Eastern region	84	20.2
	Western region	134	32.3
Educational level	Primary school	4	1.0
	Middle school	7	1.7
	High school	76	18.3
	Bachelor's degree	272	65.5
	Postgraduate degree	55	13.3
	Uneducated	1	.2
Monthly income	Less than 1000 SAR	68	16.4
	1000 to 5001 SAR	82	19.8
	5001 to 10000 SAR	97	23.4
	10001 to 15000 SAR	82	19.8
	More than 15000 SAR	86	20.7

Table 2: Parameters Related to Prevalence and Risk Factors Regarding Eczema (n = 415)

Parameter		No.	Percentage
Has your child been diagnosed with eczema by a healthcare professional?	No	224	54.0
	Yes	191	46.0
If yes, at what age was your child first diagnosed? (n = 191)	<1 year	62	32.5
	1 year	29	15.2
	2 year	31	16.2
	3 year	26	13.6
	4 year	13	6.8
	5 year	30	15.7
Which areas of your child's body are most frequently affected by eczema? (n=191) *	Scalp	24	12.6
	Face	78	40.8
	Neck	31	16.2
	Trunk	13	6.8
	Arms	105	54.9
	Legs	80	41.9
	Back	19	9.9
	Others	25	13.1
During your pregnancy, did you experience any of the following condition? (n = 191)	Gestational diabetes	11	5.8
	Hypertension	12	6.3
	Preeclampsia	8	4.2
	Urinary tract infection	8	4.2
	Viral infection	2	1.0
	Use of antibiotic	16	8.4
	Nothing	134	70.2
Do you have any of the following condition? (n=191)	Autoimmune disease Systemic Lupus Erythematosus (SLE)	2	1.0
	Diabetes mellitus	6	3.1
	Hypertension	8	4.2
	Immunological disease	7	3.7
	Others	168	88.0
Have you been experiencing any psychological issues during pregnancy? (n = 191)	No	112	58.6
	Yes	79	41.4
If you answered yes to previous question (n = 79)	Depression	21	26.6
	Study stress	14	17.7
	Anxiety	28	35.4
	Work stress	16	20.3
What was your BMI during pregnancy (n = 191)	<18.5	25	13.1
	24.9-18.5	99	51.8
	29.9-25	46	24.1
	>30	21	11.0
Which of the supplemental or vitamins you are regularly take during pregnancy? (n = 191)*	Folic acid	147	76.9
	Vitamin D	71	37.2
	Omega3-fatty acid	23	12.0
	Probiotics	10	5.2
	Multivitamins	58	30.4
	None	20	10.5
Have you been diagnosed with any of vitamin deficiency during pregnancy? (n = 191)	Iron deficiency	92	48.2
	Vitamin D	19	9.9
	Others	5	2.6
	None	75	39.3
Does your family have a history of the following condition? (n = 191)	Eczema	54	28.3
	Asthma	32	16.8
	Hay fever	1	.5
	Allergic rhinitis	18	9.4
	Food allergy	20	10.5
	None of the following	66	34.6
What was the delivery methods of your child? (n = 191)	Vaginal delivery	142	74.3
	Cesarean section	49	25.7
What was your child weight at birth? (n = 191)	<1 Kg	11	5.8
	1-1.5 Kg	28	14.7
	1.5-2 Kg	35	18.3
	2-2.5 Kg	35	18.3
	2.5-3 Kg	38	19.9
	3 Kg	33	17.3
	>3 Kg	11	5.8
At which gestational age your child was born in weeks? (n = 153)	Before 37 weeks	53	34.6
	37 to 40 weeks	87	56.9
	After 40 weeks	13	8.5

*Results may overlap

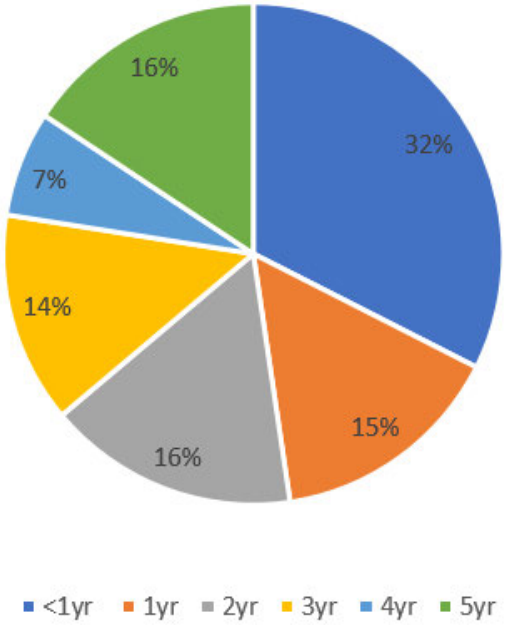

Figure 1: Illustrates Age of First Diagnosis with Eczema among Participants (n = 191)

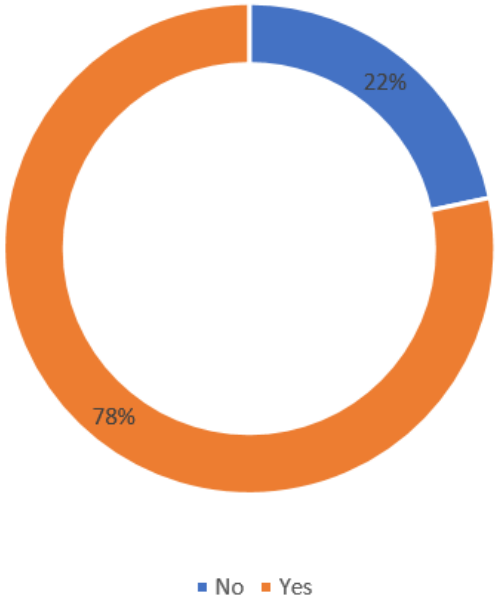

Figure 2: Illustrates Awareness of Treatment Options for Eczema among Participants

As shown in Figure 2, this data presented provides a many understating of eczema treatment options among the 415-respondent sample. In particular, aware of treatment options among 325 respondents or 78.3 percent of our sample as a whole. Ninety respondents, or roughly 21.7 percent, said they were not familiar with such choices.

Table 3 presents data on the prevalence, history and family history of eczema among 191 participants. In particular, a large proportion of respondents (30.9%) stated having a family member with other allergic disease or eczema that they have a sibling. This may indicate a genetic predisposition in families. We found only 11.0% of participants had had pets present during pregnancy or in the first year of the child's life, suggesting less exposure to environmental allergens during early life. A large proportion of children (77.0%) were breastfed and a substantial number were introduced to solids at six months (55.4%), consistent with current dietary recommendations. What is interesting, however, in that frequency of eczema flare ups differed, with parents of 34.0% indicating frequent flare ups and therefore this being a chronic disease. In addition, the effectiveness of treatment was variable, as 43.5 percent responded that treatment was somewhat effective. What the data also shows is that nearly half the participants did alter their diet, demonstrating an interest in the condition.

Table 3: Prevalence, History and Family History of Eczema (n = 191)

Parameter		No.	Percentage
Your child have any sibling with same condition (Eczema or other allergic disease)	No	132	69.1
	Yes	59	30.9
There were pets in your household during your pregnancy and your child's first year or life	No	170	89.0
	Yes	21	11.0
Have you took your child to nursery?	No	143	74.9
	Yes	48	25.1
Has your child been exposed to cigarette smoke (passive smoking) during the first year of life?	No	158	82.7
	Yes	33	17.3
Did you smoke cigarettes or use tobacco products during your pregnancy?	No	181	94.8
	Yes	10	5.2
Was your child breastfed?	No	44	23.0
	Yes	147	77.0
If yes how long was your child breastfeed? (n = 81)	6 months or less	35	43.2
	3 to 5 months	23	28.4
	2 months or less	23	28.4
At what age solid food introduce to your child? (n = 92)	6 months	51	55.4
	7 or 8 months	41	44.6
How would you describe the frequency of your child's eczema flare-ups?	Constant	34	17.8
	Frequent (several times a week)	65	34.0
	Occasional (once a week to once a month)	48	25.1
	Rare (less than once a month)	44	23.0
Did you have any known allergies or eczema during your pregnancy?	Yes, allergies	31	16.2
	Yes, eczema	17	8.9
	Yes, both	11	5.8
	No	132	69.1
How effective have these treatments been in managing your child's eczema?	Very effective	35	18.3
	Moderately effective	83	43.5
	Slightly effective	45	23.6
	Not effective	28	14.7
Have you made any dietary changes to help manage your child's eczema?	No	100	52.4
	Yes	91	47.6
Has your child has been exposed to antibiotic during first year of life?	No	120	62.8
	Yes	71	37.2
Has your child been hospitalized even?	No	154	80.6
	Yes	37	19.4
If yes how frequently in year?	Never	154	80.6
	1 to 4 years	21	16.3
	5 to 10 years	5	3.1

Table 4: Participants' Knowledge and Awareness of Eczema (n = 415)

Parameter		No.	Percentage
Are you aware of treatment options for eczema?	No	90	21.7
	Yes	325	78.3
If the answer is yes, what are the treatment options that you are aware of, including the following? (n = 325) *	Maintaining skin hydration (bathing practices, frequent of bathing)	210	64.6
	Emollients	234	72.0
	Bleach bath	19	5.8
	Elimination of exacerbation factors	141	43.4
Are you aware of the different prevention methods to avoid eczema flare-up?	No	183	44.1
	Yes	232	55.9
Are you aware of different environmental factors, psychosocial and different antibiotic use during pregnancy could be linked to risk of develop eczema in your child?	No	204	49.2
	Yes	211	50.8
Is the breast-feeding help to reduce the risk of develop eczema in your child?	No	114	27.5
	Yes	301	72.5
Is there a link between introduction of weaning food to and eczema?	No	196	47.2
	Yes	219	52.8

*Results may overlap

Table 4 presents data that is critical, providing a window into what the participants knew and understood about an eczema, a common form of dermatological condition. This finding, with a sample size of 415 individuals, shows that the majority, 78.3% know about treatment options for eczema. Nevertheless, a substantial number, 21.7%, is unaware. Among knowledgeable treatment providers, emollients were mentioned at a significant 72.0% as a leading treatment strategy. Secondly, this also shows that there is space for further education regarding less commonly used treatments.

Table 5: Shows Knowledge and Awareness about Eczema Score Results

Parameters	Frequency	Percentage
High knowledge level	28	6.7
Moderate knowledge level	132	31.8
Low knowledge level	255	61.4
Total	415	100.0

Table 6: Relation between Knowledge and Awareness about Eczema and Sociodemographic Characteristics

Parameters		Knowledge and awareness level		Total (N = 415)	p-value*
		High or moderate knowledge	Low knowledge level		
Relation to the child	Mother	119	178	297	0.315
		74.4%	69.8%	71.6%	
	Father	41	77	118	
		25.6%	30.2%	28.4%	
Age	29 years or less	45	65	110	0.481
		28.1%	25.5%	26.5%	
	30 to 35	44	61	105	
		27.5%	23.9%	25.3%	
	36 to 45	50	82	132	
		31.3%	32.2%	31.8%	
	More than 45	21	47	68	
		13.1%	18.4%	16.4%	
Residential region	Northern region	18	19	37	0.012
		11.3%	7.5%	8.9%	
	Southern region	26	29	55	
		16.3%	11.4%	13.3%	
	Central region	27	78	105	
		16.9%	30.6%	25.3%	
	Eastern region	39	45	84	
		24.4%	17.6%	20.2%	
	Western region	50	84	134	
		31.3%	32.9%	32.3%	
Educational level	Primary school	0	4	4	0.202
		0.0%	1.6%	1.0%	
	Middle school	1	6	7	
		0.6%	2.4%	1.7%	
	High school	27	49	76	
		16.9%	19.2%	18.3%	
	Bachelor's degree	106	166	272	
		66.3%	65.1%	65.5%	
	Postgraduate degree	25	30	55	
		15.6%	11.8%	13.3%	
	Uneducated	1	0	1	
		0.6%	0.0%	0.2%	
Monthly income	Less than 1000 SAR	26	42	68	0.838
		16.3%	16.5%	16.4%	
	1000 to 5001 SAR	31	51	82	
		19.4%	20.0%	19.8%	
	5001 to 10000 SAR	38	59	97	
		23.8%	23.1%	23.4%	
	10001 to 15000 SAR	28	54	82	
		17.5%	21.2%	19.8%	
	More than 15000 SAR	37	49	86	
		23.1%	19.2%	20.7%	
Child's gender	Female	87	122	209	0.195
		54.4%	47.8%	50.4%	
	Male	73	133	206	
		45.6%	52.2%	49.6%	
Has your child been diagnosed with eczema by a healthcare professional?	No	71	153	224	0.002
		44.4%	60.0%	54.0%	
	Yes	89	102	191	
		55.6%	40.0%	46.0%	

*p value was considered significant if ≤0.05

More than half (55.9%) of participants know about preventive measures but about half (44.1%) fail to do so, revealing the gaps in education that could be closed to improve eczema management. The results also show surprisingly high levels of positive perception about breastfeeding, with only 6.5 percent of respondents does not believe that breastfeeding might reduce the likelihood of developing eczema in children and almost half of

respondents do not know whether environmental factors contribute to eczema risk.

Table 5 presented data provides a clear picture of the knowledge and eczema awareness have as practiced among the surveyed population. The high results show that a large percentage, or 61.4%, have insignificant knowledge on eczema, while 6.7% has high understanding of the disease. Furthermore, 31.8 percent of respondents are moderate knowledge.

Table 6 shows that knowledge and awareness about eczema has statistically significant relation to residential region (p value = 0.012) and if the participant's child been diagnosed with eczema (p value = 0.002). It also shows statistically insignificant relation to age, relation to the child, educational level, monthly income and child's gender.

DISCUSSION

Dermatitis on the other hand is a generic term that includes multiple diseases like atopic dermatitis, allergic and contact irritant dermatitis and all belong to the eczema umbrella encompassing them. Exposure to "eczema" is common for AD: non-dermatologists and the general public often equate all forms of the condition with AD. Eczema is not only AD but also includes conditions such as contact dermatitis, nummular eczema and seborrheic dermatitis, which are characterised by pruritus and erythema, with various etiologies, morphologies or distribution patterns [14]. In this study, we wished to determine the prevalence of eczema among infants in Saudi Arabia, the prenatal risk factors in Saudi Arabia and to assess the Knowledge of eczema among parents. Our work on prevalence of eczema among children in Saudi Arabia reveals risk factors, management strategies as well as prevalence of comorbidities. We engaged with 415 parents who told us that, on average, half (54%) had previously not had a diagnosis of eczema for their child. This is a massive gap in awareness that really highlights how important it is and how important [it is] for us to educate the parents about what the early stages are and what the options are in treatment for eczema. The assignment of this finding to these concerns mirrors that of the Alshammrie *et al.* [1], who noted lack of diagnosis in kids with eczema, highlighting the urgent need for educational programs to inform parents around a very common skin condition. We also determined in our study that 32.5% of children were first diagnosed with eczema in the first year of life with the most common sites involved being the arms (53.9%) and face (40.8%). This is indeed consistent with recent reports [15,16], which have observed that eczema often occurs in the flexural area, in particular in infants. However, they say that recognizing these signs early is important because early intervention can help limit how badly the condition progresses. Our finding is also in agreement with the findings of Shi *et al.* [16], who reported that a considerable number of children present with symptoms prior to a formal diagnosis and that clinicians and parents should maintain a high level of alertness. We found several interesting risk factors for eczema. The findings found that 41.4% of parents report the experience of psychological stress during pregnancy and this is in a good agreement with findings of Williams *et al.* [17], which found that maternal stress on a significant level increases the chance of an offspring to develop atopic conditions such as eczema. Additionally, we established that 28.3% of participants had a family history of eczema, showing a genetic predisposition to eczema. This observation is confirmed by findings presented by Alhazmi *et al.* [18] showing a greater prevalence of atopic dermatitis in students from environments with varying environmental exposures, implying that both genetic factors and environmental contexts have particularly important influences on overall eczema incidence. Another important theme in our study is the environmental factors in relation to eczema management. A surprising association was found between eczema risk and having household pets. Our results support the literature that asserts that pet exposure can increase the risk for developing atopic diseases, especially in genetically susceptible children [16,19]. This relationship highlights the need for parents to be informed about potential environmental triggers and emphasizes the multifaceted approach required in managing eczema effectively. Dietary practices emerged as another critical consideration in our findings. While 77% of parents reported breastfeeding, the timing for introducing solid foods varied among participants. Some introduced solids earlier than the recommended six months. This complexity mirrors previous studies that consider the nuanced relationship between breastfeeding and eczema risk. For instance, while breastfeeding is typically advocated for its numerous health benefits, systematic reviews have shown that it may not consistently reduce the incidence of eczema and could potentially be associated with an increased risk under certain circumstances, particularly among those with existing genetic predispositions [20]. This suggests the necessity for tailored dietary guidance for parents, especially those with a family history of allergic conditions. The other most significant finding is that children with eczema were more likely to have comorbidities. In our study, we reported marked overlap between allergic rhinitis and asthma in this population. The observation is consistent with that of Ricci *et al.* [15] who observed that children with a diagnosis of eczema tend to have high rates of comorbid allergic diseases. The findings like this point to the need for comprehensive management strategies targeting not only eczema but an entire spectrum of allergic diseases and 'one size fits all' type of care. Our findings also highlight another, important dimension of eczema prevalence: geographical variations in prevalence. Overall, we found a high degree of regional variation, consistent with early studies, such as Alhazmi *et al.* [18] However, these studies reported differing prevalences rates of atopic dermatitis in differing environmental contexts, indicating that local climate and lifestyle may interact differently to significantly affect the prevalences and manifestations of eczema in different populations. Knowing such regional factors is key to develop appropriate management strategies. In our study assessment of treatment effectiveness we found that only 43.5% of parents perceived that their child's treatments were somewhat effective. This finding adds to previous research [21] that shows many parents recognize the need to use emollient, but don't adequately understand how to use them, which

sometimes causes poor control of eczema symptoms. The lack of this knowledge underscores the imperative of targeted educational intervention to prepare parents and caregivers with the skills to do management of eczema as well as use of treatment options in order to minimize reliance on potentially harmful topical corticosteroids.

CONCLUSION

This study identified a high prevalence of eczema in Saudi infants and highlighted the influence of maternal psychological stress and family history as prenatal risk factors. Strengthening parental education and early screening strategies is essential to reduce disease burden and improve infant well-being.

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We acknowledge all of the volunteers who provided samples for this research.

Conflicts of Interest

This study was not supported by any outside sources.

Informed Consent

Written informed consent was acquired from each individual study participant.

Materials Availability

All data associated with this study are present in the paper.

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This study was not supported by any outside sources.

Ethical Statement

His study was reviewed and approved by Ministry of Health (Approval No. A02320) All procedures performed in this research involving human participants were conducted in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments. Informed consent was obtained from all participants prior to data collection.

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